

Opportunity Title: Terrestrial and Planetary Permafrost Modeling and Experiments

Opportunity Reference Code: 0159-NPP-MAR24-GSFC-Interdisc

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0159-NPP-MAR24-GSFC-Interdisc

Application Deadline 3/1/2024 6:00:59 PM Eastern Time Zone

Description We seek proposals for modeling, laboratory and remote sensing studies of terrestrial and planetary permafrost. Given the interest in future Mars and asteroids missions, we are interested in proposals to study stability, evolution, depth of burial etc. of permafrost and ice deposits on these objects.

Goddard Space Flight Center (GSFC) has the state-of-the-art Martian simulation chamber to conduct detailed laboratory simulations of the shallow (down to 9 cm) Martian permafrost. Martian chamber allows studies of the water vapor diffusion through icy soils, formation of the liquid films of water in the Martian permafrost, and migration of the salty fluids in the Martian permafrost. Also, we are interested in utilizing the RGA mass spectrometer connected to the Martian chamber to study processes of water exchange between Martian permafrost and Martian atmosphere. We are also interested in development of remote sensing techniques to detect ice and water deposits, especially ground penetrating radar (GPR). GSFC has GPR equipment (200, 400 and 900 MHz antennas) that can be used for fieldwork studies of terrestrial permafrost or planetary analog sites, and NPP candidates may propose to use this equipment for their studies. Applicants may contact the listed advisors for more information about available equipment.

Location:

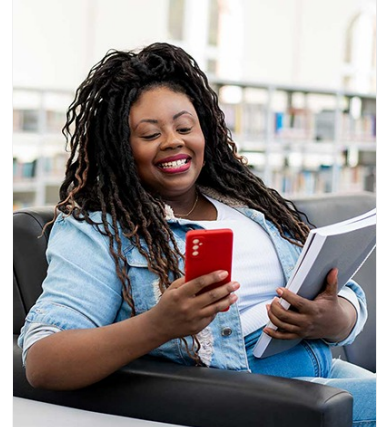
Goddard Space Flight Center
Greenbelt, Maryland

Field of Science: Interdisciplinary/Other

Advisors:

Alexander Anatolevich Pavlov
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301-614-5945

Applications with citizens from Designated Countries will not be accepted at this time, unless they are Legal Permanent Residents of the United States. A complete list of Designated Countries can be found at: <https://www.nasa.gov/oijr/export-control>.



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Eligibility is currently open to:

- U.S. Citizens;
- U.S. Lawful Permanent Residents (LPR);
- Foreign Nationals eligible for an Exchange Visitor J-1 visa status; and,
- Applicants for LPR, asylees, or refugees in the U.S. at the time of application with 1) a valid EAD card and 2) I-485 or I-589 forms in pending status

**Eligibility
Requirements**

- **Degree:** Doctoral Degree.